

The Impact of Electronic Access on Basic Library Services: One Academic Law Library's Experience

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The impact of the Internet and digital products on libraries has been widely discussed; however, few studies have presented quantitative data that indicate the impact of such products on use patterns in libraries. The authors present a case study of traditional library use data over ten years in one law library and discuss the implications of these statistics.

¶1 Although many articles have been written about digital, electronic, and Internet products and services in and for libraries, few have actually addressed in quantitative terms the impact of such services on traditional library functions.¹ Partly this results from the difficulty of proving that **A** causes **B** (i.e., that the introduction of electronic service **A** led to a noticeable change in the use of nonelectronic service **B**). Also, librarians have been somewhat reluctant to write library-specific articles, an understandable reluctance given the difficulty of generalizing from one library to another. Despite these limitations, we feel that there is value in documenting quantitatively some changes that occurred in use patterns in one library at the point at which substantial electronic resources became readily available to its primary users. The statistics presented in this article about changes in circulation, photocopy, and shelving operations at one particular library show some very interesting and perhaps even dramatic trends. In presenting this data, we wish to make clear that we are not taking a value-based position on these issues. The purpose of this article is not to suggest that one format, electronic or otherwise, is "good" or "bad" or even "better" or "worse." Rather, the article presents data from one real-world situation that illustrate quantitatively many of the trends that have been talked about in the profession and the literature.

¶2 The library described is the Georgetown University Law Library. The library has five levels, close to a million volumes, and serves a student population of about 2500 students and a large faculty of more than eighty. Most students currently arrive on campus with their own computer. Particularly in the past few years, students are trained on either LEXIS or Westlaw fairly early in their first year and thereafter have easy access electronically to a vast array of legal materials which they can print without charge on vendor-supplied printers (or their own personal printers). The library has also been adding many formerly print-only products to its Web page of subscription databases. The library building is relatively new, opening for use in January 1989, and detailed statistics on photocopying, student circulation, and shelving have been maintained from the beginning.² The data presented here strongly indicate that law students at Georgetown are using electronic resources rather than printed materials as their primary source of information.

Photocopying

¶3 As shown in table 1, from July 1989 to June 1993, student photocopying showed a consistent and even dramatic rise, culminating in the generation of 3.2 million vending copies in FY 1993-94. Indeed, at that point, despite a full-time photocopy person, two additional staff persons, service contracts on all student copiers, and even some student assistant and librarian help, the library was often simply not able to keep up with the demand. In many months 250,000 or more vending copies were generated, and in some months 300,000 or more; the peak month saw over 360,000 copies generated.

Table 1
Photocopy Volume FY 1989-90 to 1993-94

Fiscal Year	Page Volume	Increase/Decrease Relative to FY 1989-90
1989-90	2,784,247	NA
1990-91	2,993,287	7.5%
1991-92	3,130,911	12
1992-93	3,014,207	8
1993-94	3,225,228	16

¶4 As shown in table 2, beginning in FY 1994-95, vending copying began to show a decline relative to FY 1993-94. That decline, which was around 16% for FY 1993-94 and FY 1995-96, continued fairly steadily to FY 1998-99, by which time vending photocopying was down a fairly dramatic 52% from the peak of FY 1993-94.³ Indeed, the table shows a fairly steep decline, with the exception of FY 1995-96, which showed about the same decline as the previous year. One might view the very high photocopying volume of FY 1990-91 to FY 1993-94 as an aberration, treating FY 1989-90 as the "normal" volume. However, even under this scenario, the volume was marginally lower in 1994-95 and 1995-96 and continued to decline significantly in the years after 1995-96, so that by 1998-99 the decrease relative to 1989-90 was 44%. Table 2 shows both of these declines.

Table 2
Photocopy Volume FY 1993-94 to 1998-99

Fiscal Year	Page Volume	% Decrease Relative to FY 1993-94	% Increase/Decrease Relative to FY 1989-90
1993-94	3,225,228	NA	16%
1994-95	2,699,334	-16%	-3
1995-96	2,692,916	-17	-3
1996-97	2,261,624	-30	-19
1997-98	1,907,893	-41	-31
1998-99	1,564,181	-52	-31

Circulation

¶5 Circulation statistics rose after the library moved into its new building in 1989 through the 1993-94 fiscal year, as illustrated in table 3. These compiled statistics include the circulation to Georgetown law students of course reserve items, current periodical issues, videotapes from the media collection, and treatises from the general collection. Current editions of hornbooks, nutshells, and casebooks are kept in an open reserve area, so use of this material is not reflected in the circulation statistics. The circulation desk was staffed with a full-time staff member and two students during peak hours of operation from 1989 through 1994. The increase in circulation during these years can perhaps be attributed to an attractive new library building that was more inviting to students than the former library space.

Table 3
Student Check-out Transactions FY 1989-90 to 1993-94

Fiscal Year	Transactions	% Increase/Decrease Relative to FY 1989-90
1989-90	23,050	NA
1990-91	27,985	21%
1991-92	33,311	45
1992-93	30,314	32
1993-94	33,207	44

¶6 After peaking in 1993-94, student circulation checkout transactions began to decline, as indicated in table 4. Circulation policy did not change during the ten-year period examined in this survey, and there was no major shift in the teaching patterns of the law school. Student staffing at the circulation desk was reduced in accordance with the decreased demand for service. The parallel with the photocopy statistics for this five-year time period is striking. The trend revealed in the photocopy statistics over the ten-year period as compared to the first full year in the library building, FY 1989-90, also appears in the circulation transaction statistics, although the decline in circulation is not as dramatic as that in photocopying.

Table 4
Student Check-out Transactions FY 1993-94 to 1998-99

Fiscal Year	Transactions	% Decrease Relative to FY 1993-94	% Increase/Decrease Relative to FY 1989-90
1993-94	33,207	NA	44%
1994-95	28,900	-13%	25
1995-96	24,596	-26	7
1996-97	21,957	-34	-5
1997-98	20,373	-39	-12
1998-99	18,594	-44	-19

Shelving

¶7 The shelving statistics in table 5 show a decline similar to the photocopying and circulation statistics, although the peak year in shelving was in FY 1991-92. These figures include all items reshelfed from in-house use, newly acquired materials, and items returned from circulation. All of the library's holdings are housed and therefore were shelved within the existing building. Daily counts were tallied by the shelving staff for all items that were handled. Staffing in the shelving unit during the first five years in the new library building consisted of a full-time supervisor, three full-time shelving assistants, and forty hours per week of student labor.

Table 5
Volume of Books Reshelfed FY 1989-90 to 1993-94

Fiscal Year	Books	% Increase/Decrease Relative to FY 1999-90
1989-90	203,669	NA
1990-91	219,084	8%
1991-92	263,050	29
1992-93	227,866	12
1993-94	200,241	-2

¶8 The amount of student labor in the shelving section was gradually reduced from 1994 to 1997 due to the decline in workload, and in the summer of 1997 one full-time shelving assistant position was transferred to another area in the library. Many duplicate subscriptions to primary materials throughout the library have been eliminated since 1997 without noticeable impact on the library's users. The shelving statistics continue their decline along with the photocopy and the circulation statistics, as shown in table 6.

Table 6
Volume of Books Reshelved 1993-94 to 1998-99

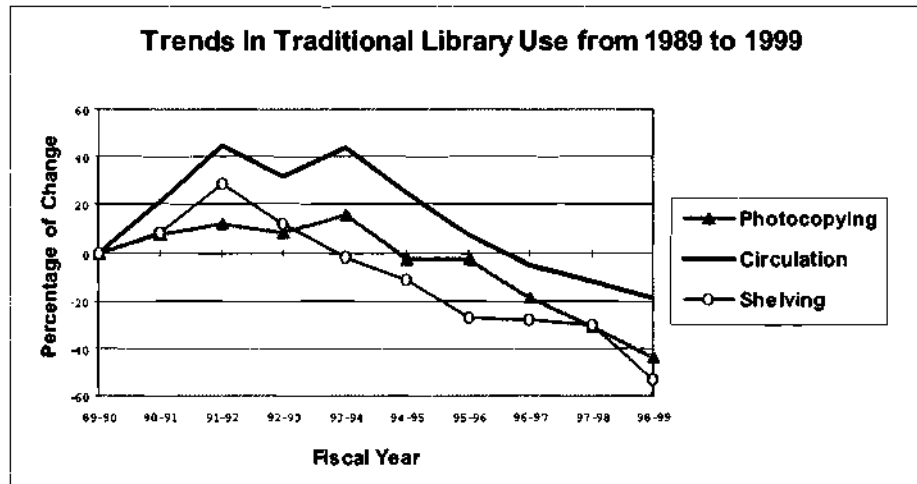
Fiscal Year	Books	% Decrease Relative to FY 1993-94	% Increase/Decrease Relative to FY 1989-90
1993-94	200,241	NA	-2%
1994-95	182,205	-9%	-11
1995-96	148,718	-26	-27
1996-97	145,967	-27	-28
1997-98	143,025	-29	-30
1998-99	96,601	-52	-53

¶9 More specific shelving statistics maintained for various portions of the library's collection from 1993-94 to 1998-99 reveal that the section with the sharpest decline (62%) in volumes reshelved during this five-year period was that containing the federal and state primary materials and state treatises. The shelving for the section containing bound journals from 1980 to the present declined nearly as sharply over the same five-year period with a 61% drop. The shelving for legal treatises and international materials declined at lower rates over the five-year period, by 46% and 26% respectively. No major collection shift occurred during this time that could have contributed to a change in use patterns.

Discussion

¶10 As noted earlier, there is no way to directly link the circulation, shelving, and vending photocopying usage declines to electronic resources. Nevertheless, there are some strong indicators that the increased availability of electronic resources has indeed been at least one of the factors contributing to these declines. The graph below illustrates the similar trends in all three areas over the decade from 1989-90 to 1998-99.

¶11 It is interesting to note that the first vending photocopy decline occurred in FY 1994-95; that event coincides with introduction of the Netscape browser in the same year. Netscape was not widely available in the library at that time, nor were many of the electronic products that are now a part of the library's array of services. The data suggest that even before the wide availability of the Internet and electronic products, many students had started to change their information-seeking patterns and may have been moving from print sources to Westlaw and LEXIS as their first choice for research. By this time, all law students had the option of accessing LEXIS and Westlaw from their homes.



The decline in shelving statistics that began in 1992-93 also suggests that research patterns had begun to change before the arrival of the World Wide Web in the library.⁴ In later years from 1994 to 1999, the areas of the collection that showed the sharpest decline in shelving statistics, namely primary legal materials and bound journals from 1980 to date, contain the type of legal information that is the most prevalent in online resources. In viewing the composite graph of photocopy, circulation, and shelving from 1989 to 1999, it is striking to note that all three services, while exhibiting somewhat different numerical characteristics, show very similar patterns of rising and declining. The parallel patterns of shelving and photocopying are especially striking.

¶12 As noted, most students now arriving on campus are fairly computer literate and come with their own computer. Use of the Internet, computers, and search engines is already a part of most students' vocabulary. With easy access to a wide variety of legal materials both through LEXIS, Westlaw, and the library's own Web page, there is less need for students to physically come to the library to retrieve reporters and looseleaves to copy. It might even be said, though again we have no supporting data, that the law students at Georgetown simply envision a different information universe from their peers in the early 1990s, a universe in which the first choice for research is not books or other printed materials but rather electronic sources. While librarians and other information professionals know that books and other printed sources are still important sources of information, the students at Georgetown, for better or worse, seem to have a growing disinclination to use these print resources. They seem to have embraced almost totally the instant gratification and "fast and flexible" characteristics of most digital products.⁵ If this is true, there are important implications for both the Georgetown University Law Library and many other libraries as well.

¶13 It is clear that traditional collection-use measurements no longer reflect a complete picture of the research activity within a library collection. Libraries are actively seeking new measures to capture electronic research activity and off-site use of library resources. Patrons are using online databases and the Internet for an increasing amount of research, and it is essential for libraries and online vendors to work together to produce meaningful data that measure the use of online resources.⁶ Financial resources directed toward collection development may need to be allocated to different material formats. The cost of an electronic resource needs to be measured against the use that it receives. Research instruction must be adapted to meet the needs

of the current generation of students as they rely on more electronic resources for information. Finally, staffing patterns need to be examined continually to make certain that the staff efforts are distributed appropriately to meet the needs of patrons. Measurements of the use of electronic resources may give a library insight as to the most appropriate ways to reflect the resources in the online catalog and the library's Web site in order to meet the real needs of library users.

Conclusion

¶14 A direct cause-and-effect relationship between the increased availability of electronic resources and the decline in traditional use statistics is difficult to prove. However, the statistics presented in this article illustrate in graphic terms the changes in print collection use patterns in one library over the past decade.⁷ Most historical and traditional measures of library collections and usage have focused on quantity. Librarians are increasingly aware that measures of the *quality* of library service are needed to provide a complete perspective. For example, it is not enough to know how many times someone accessed a database or a journal in a given period of time. We also need to know how many times someone actually obtained the information he or she was seeking. The Association of Research Libraries has begun an effort to devise better methods of measuring the quality of library service.⁸ A dramatic shift in the focus of what libraries measure is needed to provide more inclusive evaluation techniques. The traditional use data described here serve as an indicator of the changing times that libraries face. It reflects many of the trends in research patterns that have been discussed generally in the profession and the literature over the past decade, and it reflects the need for new ways of evaluating libraries and their services.

Notes:

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1. See, e.g., Ronald J. Heckart, *Imagining the Digital Library in a Commercialized Internet*, 25 J. ACAD. LIBRARIANSHIP 275 (1999); Cherrie Noble, *Reflecting on Our Future: What Will the Role of the Virtual Librarian Be?* 18 COMPUTERS IN LIBR. 50 (1998); Noland F. Pope, *Digital Libraries: Future Potentials and Challenges*, 16 LIBR. HI TECH 147 (1998); Roy Tennant, *Determining Our Digital Destiny*, 31 AM. LIBR. 54 (2000). Many other articles deal with specific products and services.
2. Statistics in this article use FY 1989-90 as the base year; the last six months of FY 1988-89, which were the first six months of the building's operation, are not included.
3. Although beyond the scope of this article, staff photocopying has not been subject to these kinds of dramatic declines as it responds to a different set of circumstances, including professional and bibliographic instruction activities of librarians.
4. This article considers these matters primarily from a quantitative view, with some comments on the implications of the statistics. A much broader examination and analysis by a legal research and writing faculty member of the teaching and research issues posed by the shift from print to electronic resources in the legal profession can be found in an article by Diana R. Donahoe, www.teachinglaw.com (July 2000), at <http://www.teachinglaw.freewebsites.com/>.
5. For readers who wish a somewhat longer view of the changes that have long been a part of the technology of law, see Peter W. Martin, *Pre-Digital Law: How Prior Information Technologies Have Shaped Access To and the Nature of Law*, 30 REV. JURIDIQUE THEMIS 153, 170 (1996), available at <http://www.lexum.umontreal.ca/en/equipes/technologie/conferences/dac/martin/martin.html>.
6. One library group has adopted guidelines for measuring usage of Web-based resources. INT'L COALITION OF LIBRARY CONSORTIA, GUIDELINES FOR STATISTICAL MEASURES OF USAGE OF WEB-BASED INDEXED, ABSTRACTED, AND FULL TEXT RESOURCES (NOV. 1998), at <http://www.library.yale.edu/consortia/webstats.html>.

7. It is important to note that the decline in traditional use patterns has not affected how Georgetown law students evaluate the library. Graduating students have continued to rank the law library as having an extremely high quality of service and an outstanding collection that meets their needs.
8. See Colleen Cook et al., *LibQUAL+: One Instrument in the New Measures Toolbox*, ARL: BIMONTHLY REP. RES. ON LIBR. ISSUES & ACTIONS, Oct. 2000, at 4.